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Notice of Allowability

Application No.

10/506,360

Applicant(s)

CALLENS ET AL.

Examiner

Russell Frejd

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment received 13 November 2007.
2. ☒ The allowed claim(s) is/are 10-14 and 16.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

RUSSELL FREJD
RUSSELL FREJD
 PRIMARY EXAMINER

In re Application of: Callens et al.

Allowance of Application # 10/506,360

1. The following communication is in response to applicant's amendment received 13-November-2007. Claims 10-14 and 16 are pending in the application. Claims 1-9 and 15 are canceled.

Examiner's Amendment

2. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee. Authorization for this Examiner's Amendment was given by Kevin Godlewski (Reg. No. 47,598) on 4-January-2008.

2.1 In the Claims:

Claim 16	line 8	Change "the encoded instructions executable by a computer to" to --the encoded instructions, which when executed by a computer--.
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Reasons for Allowance

3. The following is an Examiner's Statement of Reasons for the indication of allowable subject matter.

3.1 Claims 10-14 and 16 are considered allowable, since when reading the claims in light of the specification, as per MPEP § 2111.01, none of the references of record alone or in

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combination disclose or suggest the combination of limitations specified in independent claims nos. 14 and 16, including:

a plurality of guide tubes and a control cluster which itself comprises a plurality of control rods which are received in the guide tubes and a support for the control rods [**defined at** p. 2, Ins. 8-17; p. 5, Ins. 21-32], the assembly comprising a helical spring for damping an impact of the support against an upper end piece of the assembly in an event of the control cluster falling during a shutdown of the nuclear reactor [p. 2, Ins. 13-17; p. 5, Ins. 9-20], the system comprising a computer and a storage arrangement configured to store at least a program comprising instructions for performing the following steps of designing a nuclear fuel assembly [p. 3, Ins 11-17; p. 7, Ins. 15-29]: establishing a progression of speed of a the control cluster after the impact of the support against the upper end piece [p. 2, Ins. 19-21; p. 8, Ins. 1-12]; establishing, based on the speed of the control cluster after the impact of the support against the upper end piece, a maximum longitudinal load for compression of the spring [p. 2, Ins. 22-23]; and establishing, based on the maximum longitudinal load for compression of the spring, at least a maximum shearing stress in the spring [p. 2, Ins. 25-27; p. 14, Ins. 1-24].

Dependent claims 10-13 are deemed allowable as depending either directly or indirectly from independent claims 14 and 16.

3.2 The instant application is directed to a non-obvious improvement over the invention described in USP 5,076,995, issued to Canat, which teaches a device for absorbing shock upon the fall of neutron absorbing bars in a nuclear reactor fuel assembly, by providing a restricted fluid leak path out of the cylinder when the piston is driven into the cylinder from a rest position

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into which the piston is urged by spring means. Canat does not teach determining a maximum shearing stress in the spring, as disclosed by the present invention.

3.3 The art of record, either individually or in combination, fails to teach, suggest, or render obvious the specific arrangement of elements in the same combination as now required by the amended claims. In view of the foregoing, the claims of the present application are found to be patentable over the prior art.

Response Guidelines

4. Any comments considered necessary by applicant **MUST** be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should clearly be labeled "Comments on Statement of Reasons for Allowance".

4.1 Any response to the Examiner in regard to this allowance should be

directed to: Russell Frejd, telephone number (571) 272-3779, Monday-Friday from 0530 to 1400 ET, **or** the examiner's supervisor, Kamini Shah, telephone number (571) 272-2279. Inquires of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist (571) 272-2100.

mailed to: Commissioner of Patents and Trademarks
P.O. Box 1450, Alexandria, VA 22313-1450

or faxed to: (571) 273-8300

Hand-delivered responses should be brought to the Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA, 22314.

Date: 5-January-2008

/Russell Frejd/
Primary Examiner AU 2128

**RUSSELL FREJD
PRIMARY EXAMINER**